

Suborder ANATINACEA.

Fam. Lyonsiidæ.

Lyonsia cuneata (Gray).

Anatina cuneata, J. E. Gray, Spicil. Zool. pl. iii. fig. 14.

? *Lyonsia malvinensis*, vide Fischer, Man. de Conch. p. 172 (1837).

Rapid Point, Port Egremont; also Roy Cove, small, live examples.

We cannot discover either a description of *L. malvinensis* or authority for the appellation, and therefore conjecture it to be a mere *nomen nudum*. The specimens from the localities above quoted are small, few, and sometimes distorted; we are not quite sure, therefore, whether they have been distinguished aright. *L. cuneata*, Gray (*Osteodesma*, Desh.), was reported from Port Stanley, East Falklands, on stranded roots of *Macrocystis*, by the Scottish National Antarctic Expedition (1902-1905).

EXPLANATION OF PLATE VII.

Fig. 1. *Savatieria bertrandi*, sp. n.

Fig. 2. *Limopsis hardingii*, sp. n.

Fig. 3. *Sphærium vallonianum*, sp. n.

Fig. 4. *Brachyodontes (Hormomya) blakeanus*, sp. n.

Fig. 5. *Cyamium (Cyamionema) decoratum*, sp. n.

Fig. 6. *Mya antarctica*, sp. n.

Fig. 7. *Voluta ancilla*, Sol. (embryonic).

XIII.—*Descriptions and Records of Bees*.—LVI.

By T. D. A. COCKERELL, University of Colorado.

Stenotritus elegans, Smith, variety *a*.

A female from Tennant's Creek, Central Australia (*Field*; Nat. Mus. Victoria, 46), has apparently been in alcohol, and the pubescence is in bad condition. So far as can be made out, there is no fuscous hair on the thorax above, and no black hair on the abdomen. The mesothorax shows olive-green tints in front. The first r. n. joins the second s.m. a little before the middle, instead of a little beyond as in Smith's type of *S. elegans*. Possibly this is a distinct species, but it cannot be satisfactorily separated without better material.

No males assigned to *Stenotritus* are known: but it seems

very probable that the genus *Gastropsis*, Smith, represents the male sex of *Stenotritus*. The two agree in venation and the structure of the metathorax.

Paracolletes crassipes, Smith.

A male from Caloundra, Oct. 30, 1912 (Queensl. Mus. 73), is peculiar in the venation, the third s.m. being extremely broad above, and the third t.-c. strongly bowed outward, with only a single curve.

Paracolletes nigrofulvus, sp. n.

♂.—Length about $11\frac{1}{2}$ mm., rather slender.

Black, with the hind margins of the abdominal segments, and the hind tarsi, obscurely ferruginous; hair of head and thorax abundant, mostly pale ochreous, but brownish black on sides of face, on front and vertex (but not on occiput), on mesothorax except anteriorly, and on scutellum; flagellum strongly crenulated beneath, scarcely reddish; head broad, facial quadrangle much broader than long; mandibles dark; clypeus densely covered with light ochreous hair, but just above the hair is brownish; mesothorax and scutellum shining, very sparsely and feebly punctured; postscutellum unarmed; area of metathorax smooth and shining, obtusely transversely ridged in middle. Legs with ochreous hair; spurs testaceous; tegulae shining piceous. Wings dusky; nervures and the large stigma red-brown; b. n. meeting t.-m.; second s.m. receiving first r. n. distinctly before middle; third s.m. receiving second r. n. a little before the end; third s.m. nearly or quite twice as large as second. Abdomen shining, without evident punctures, the basal segments with thin pale ochraceous hair, but on the third and beyond this gives way to black, very short and scanty until the sixth segment, on which it is long; the sides subapically show long pale hair; apical plate broadly expanded at end, truncate.

Hab. Shoalhaven, New South Wales, March 9, 1894 (*Froggatt*, 72).

In my table in *Trans. Amer. Ent. Soc.* 1905, p. 345, this runs to 15, and runs out because of the ochraceous and black hair. It is related to the Tasmanian *P. obscurus* (Sm.). In my table in *Ann. & Mag. Nat. Hist.*, Jan. 1906, it runs to *P. obscuripennis*, Ckll., a related but much smaller Tasmanian species.

Paracolletes providellus bacchalis, subsp. n.

♂.—Length a little over 7 mm.

Differing from *providellus* as follows: abdomen with only the faintest greenish tinge, easily overlooked; hind tibiæ, and basal half of their basitarsi, bright chestnut-red; hair of face stained with fuscous, of scape, front, and vertex dark fuscous or black; tegulæ piceous; hind margins of abdominal segments hardly at all reddish; b. n. meeting t.-m.

Hab. Bacchus Marsh, 2. 1. 06 (*F. L. Billinghamurst*; Nat. Mus. Victoria, 88).

I should have thought this a new species, were it not that the two following varieties appear to connect it with *P. providellus*:—

Variety *a.* Abdomen distinctly dark green; hind tibiæ and greater part of basitarsi chestnut-red. Victoria, Sept. 1901 (*C. French*; Turner collection).

Variety *b.* Abdomen distinctly dark green; hind legs coloured as in the other forms, except that the tibiæ have a broad dusky shade beyond the middle. Windsor, Victoria (*French*; Froggatt coll. 186).

Paracolletes ibex, sp. n.

♂.—Length 8 mm.

Slender, black; hair of head and thorax long, greyish white, black on sides of face and on vertex; mesothorax and scutellum with very long black hairs; upper part of face with a little black hair; head broad; mandibles red at apex; clypeus dullish, not strongly punctured; flagellum dark, crenulated below, and the margins of the joints projecting above, the whole suggesting the horns of an ibex; mesothorax moderately shining, little punctured; scutellum dull and granular; area of metathorax large, dull, shining at extreme base. Legs slender, black, with pale hair; spurs creamy white; tegulæ piceous. Wings a little dusky, nervures and the large stigma dusky ferruginous; b. n. meeting t.-m.; second s.m. broad, receiving first r. n. a little beyond middle; third s.m. broad above, receiving second r. n. some distance from end. Abdomen dullish, black, hardly punctured, hind margins of segments obscure reddish; hair of abdomen very thin, scattered, pale, but dark fuscous at apex; ventral segments with thin white hair-fringes.

Hab. Windsor, Victoria (*French*, 1909; Froggatt coll. 95).

Allied apparently to *P. cinereus* (Sm.), but differing by the black legs and other characters. Easily known from *P. providellus bacchalis* by the peculiar antennæ.

Paracolletes semipurpureus (Cockerell), var. *b*.

♀.—Vertex, thorax above, and tubercles with light orange-fulous hair, contrasting with the white of face, pleura, and metathorax; anterior and middle basitarsi almost entirely black; red of hind tibiæ and tarsi rather dusky. Abdomen strongly crimson, the hair at end mostly whitish, but fuscous at extreme apex; b. n. meeting t.-m.

Hab. Rutherglen, Victoria (*French*, 1909: Froggatt coll. 87).

This is a variable species, but I believe certainly distinct from *P. cupreus* (Sm.), with which it was at first associated as a subspecies. A specimen of *P. cæruleotinctus*, Ckll., is also labelled Rutherglen, 1909 (*French*; Froggatt coll. 85).

Paracolletes sigillatus, sp. n.

♀.—Length 10 mm.

Black, including the legs (tarsi reddish at end), the short flagellum ferruginous beneath except at base, the mandibles dark red apically, and the hind margins of the abdominal segments broadly testaceous; hair of head and thorax pale ochreous dorsally, somewhat fuscous on vertex, but on face, cheeks, pleuræ, and metathorax dull white; head broad; clypeus only moderately shining, with scattered punctures; mesothorax shining, with weak punctures; scutellum shining in front, dull and rough behind; postscutellum angularly produced behind, with a small shining button-like tubercle (suggesting the seal on the flap of an envelope, whence the specific name); arca of metathorax dull, but other parts of metathorax brilliantly shining. Legs with pale hair, hind tibial scopa suffused with fuscous on outer side; tegulæ dark rufo-piceous. Wings dusky, nervures and stigma dark brown; b. n. falling a little short of t.-m.; stigma lanceolate; marginal cell long and narrow; second s.m. small, receiving first r. n. a little before middle; third s.m. very large, more than twice as large as second, as broad above as second is below, receiving second r. n. as far from its end as first r. n. is from base of second s.m. Abdomen shining, not punctured, densely covered apically with very pale dusky ochreous hair, and bands of the same covering the pallid margins of the third and fourth segments, and of the second at sides.

Hab. South Australia ; the specimen is 74 of the Froggatt collection, and is labelled "S. Aust., W. W. F., Blackburn, 1909."

By the character of the postscutellum, the large third submarginal cell, &c., this falls next to *P. tuberculatus*, Ckll., but it has a very different abdomen.

Paracolletes humerosus cyanurus, subsp. n.

♀.—Length a little over 9 mm.

Rather slender; hair of vertex and dorsum of thorax (except broad anterior corners of mesothorax) black; the large humeral hair-patches very conspicuous, white, with a faint creamy tint; abdomen shining, distinctly purplish, the hind margins of the segments broadly reddened; hair at apex black; pygidial plate bright ferruginous. The legs agree with *humerosus* as described by Smith; stigma and nervures dark ferruginous; first r. n. entering second s.m. before middle (as in *humerosus*); third s.m. very broad above.

Hab. "Oakley, Victoria" (*French*, 1909; Froggatt coll. 78).

Possibly a distinct species, but certainly very close to *P. humerosus* (Smith).

Paracolletes rebellis, Cockerell.

Three from Nat. Mus. Victoria (113, 114, 115), one from Woodend, the others without locality.

Paracolletes melbournensis, Cockerell.

Rutherglen, Victoria (*French*; Froggatt coll. 193); no locality (Nat. Mus. Victoria, 101).

Paracolletes leai, Cockerell.

Wilson's Promontory, Christmas 1905 (*J. A. Kershaw*, Nat. Mus. Vict. 264); Buchan, Jan. 20, 1907 (Nat. Mus. Vict. 81); King I., Tasmania (*J. A. Kershaw*; Nat. Mus. Vict. 204, 205, 208).

Paracolletes tuberculatus, Cockerell.

Oakleigh (*B. Hill*; Nat. Mus. Vict. 79); no locality (Nat. Mus. Vict. 82).

Paracolletes argentifrons, Smith, var. *a.*

W. Australia (*F. Duboulay*, Nat. Mus. Vict. 73).

Paracolletes providus, Smith.

Near Melbourne (Nat. Mus. Vict. 262): no locality (Nat. Mus. Vict. 87); N.S. Wales (*J. A. Kershaw*, Nat. Mus. Vict. 83).

Paracolletes viridicinctus, Cockerell.

Croydon, Jan. 11, 1909 (*S. W. Fulton*; Nat. Mus. Vict. 91, 92, 94). Perhaps not quite typical, but not to be separated.

Parasphecodes vermiculatus, sp. n.

♂.—Length 9 mm.

Parallel-sided, not very slender; head, thorax, and the long antennæ black; clypeus with the apical part broadly cream-colour, the light area coming to a point in middle above; labrum black, with the transverse projecting edge ferruginous; mandibles black; tongue short and broad; hair of head and thorax dull greyish white, rather scanty; eyes strongly converging below; mesothorax and scutellum entirely dull and minutely granular; pleura rugulose; area of metathorax large, sharply bounded in middle behind, entirely covered with strong vermiform rugæ, the depressions between them shining, and quite without a smooth posterior margin; tegulæ dark rufous with a darker spot. Wings hyaline, conspicuously dusky at apex; stigma dark rufous, nervures fuscous; second s.m. very broad; first r. n. meeting second t.-c.; third s.m. quadrate, broad above, with the outer side bulging; outer nervures not weakened; femora black, with the knees red; tibiæ bright chestnut-red, the hind ones more or less suffused with dusky; tarsi black, with apex of last joint red. Abdomen bright chestnut-red, the fifth segment and beyond black or nearly; first two segments very minutely punctured; suture between first and second somewhat depressed, but not that between second and third; first segment wholly red; no lateral hair-patches; a black patch on ventral side at extreme base.

Hab. Australia, presumably Victoria; Nat. Mus. Victoria, 173, presented by G. F. Gill.

In my table in *Ann. & Mag. Nat. Hist.*, Sept. 1904, this runs to *P. stuchila*, Sm., differing by the densely wrinkled base of metathorax, first abdominal segment (dorsal) entirely red, third segment not depressed at base, and first r. n. meeting second t.-c. Otherwise it agrees with Smith's account of *P. stuchila*, and my notes on the type. The

combination of red tibiae with black tarsi is a striking feature, and throws it entirely out of the table in Trans. Amer. Ent. Soc., Aug. 1910.

Parasphecodes arciferus, sp. n.

♀.—Length 9 mm., expanse a little over 18.

Head, thorax, antennæ, and legs black, except that the flagellum is ferruginous beneath apically (this is not conspicuous), and the tarsi are obscurely reddish at apex; hair of head and thorax greyish white; head broad; clypeus shining, with sparse distinct punctures and a strong median depression; mandibles dark red subapically; vertex shining; mesothorax and scutellum densely and rather coarsely punctured, the shining surface visible between the punctures on scutellum and hind part of mesothorax; tubercles densely fringed with white hair; area of metathorax peculiar, the hind margin thickened and obtuse, but interrupted in middle, so that the rather narrow area proper, which is finely obliquely striate, has its hind edge curved on each side and pointed in the middle, like a printer's bracket; sides of metathorax very hairy. Legs with pale hair, middle femora with a fulvous tuft beneath at base; hind spur simple; tegulae rufo-piceous. Wings hyaline, broadly dusky apically; stigma dark reddish, nervures sepia, third t.-c. and second r. n. conspicuously weakened; stigma rather small; second s.m. very broad, receiving first r. n. before its end; third s.m. much broader below than above. Abdomen chestnut-red, the basal half of first segment black, the third segment suffused with blackish, the fourth and fifth black, the hair at apex dark sooty; first two segments conspicuously punctured, the punctures well separated on middle of second; very small white hair-patches at sides of base of segments 2 and 3; fourth and following ventral segments black; second ventral segment with a large median tubercle.

Hab. Mordialloe, Victoria (*F. P. Spry*; Nat. Mus. Viet. 256).

In the table in Ann. & Mag. Nat. Hist., Sept. 1904, this falls with *P. tuchilas*, Sm., and *P. lichatus*, Sm. In *P. tuchilas* the area of metathorax is bounded by a sharp ridge, and the hind margins of the first two abdominal segments are darkened. In *P. lichatus* the metathorax is also unlike that of *P. arciferus*. From all the similar species, *P. arciferus* is readily known by the tubercle on the second ventral segment of abdomen.

Parasphecodes fultoni, sp. n.

♀.—Length 9 mm.

Head, thorax, antennæ, and legs black, with light ochraceous pubescence, becoming light fulvous dorsally; mandibles obscurely reddish apically; clypeus shining apically, dull basally, strongly punctured, without a median groove; mesothorax densely and finely rugoso-punctate; scutellum similarly punctured, but bigibbous, with a median sulcus, the summits of the elevations shining; area of metathorax large, covered with strong rather wavy longitudinal rugæ, except a narrow apical band just before the semicircular rather sharp edge; upper part of truncation with a rather inconspicuous but long tuft of pale hair; inner side of tarsi with reddish hair; tegulæ bright clear fulvous. Wings dusky, darker apically; stigma dull ferruginous, large; nervures sepia, third t. c. and second r. n. weakened; second s.m. small; first r. n. meeting second t.-c.; third s.m. broader below than above. Abdomen with the first two segments chestnut-red (the first not black at base), very finely punctured; third more dusky, nearly half covered by a large broad blackish triangular area, but hind margin broadly red; fourth black, with the hind margin dull red; apical segments black, and hair at apex black: second and third segments with fine white pile at extreme base laterally.

Hab. Croydon, Australia, Jan. 11, 1909 (*S. W. Fulton*; N. Mus. Vict. 189).

Mr. Fulton, on the same day, took *P. speculiferus*, Ckll. (N. Mus. Vict. 199), at Croydon; it is very like *P. fultoni*, but differs in the colour of the hair, the darker tegulæ, and the finer, not wrinkled, rugæ of metathoracic area. *P. fultoni* is also closely allied to *P. cirriferus*. Ckll., but much smaller.

Parasphecodes plorator, Cockerell.

The original type was labelled Melbourne, but seven specimens now before me were all collected by Mr. S. W. Fulton at Croydon (Nat. Mus. Victoria, 90, 95, 98, 241, 242, 244, 245).

The females of the black or almost black species of *Parasphecodes* known to me may be separated as follows:—

- | | |
|---|-----------------------------|
| Area of metathorax without rugæ | <i>plorator</i> , Ckll. |
| Area of metathorax with rugæ | 1. |
| 1. Apical half of abdominal venter with coarse black hair | <i>fumidicaudus</i> , Ckll. |
| Apical half of abdominal venter with light hair | 2. |

2. Second ventral segment of abdomen with a dense tuft of hair covering the slight median elevation *noachinus*, Ckll.
 Second ventral segment without such a tuft of hair; mesothorax more densely punctured. . . 3.
3. Tubercle on second ventral segment low; abdomen wholly black *dissimulator*, Ckll.
 Tubercle on second ventral segment high; first three segments of abdomen very dark red. *atrorufescens*, Ckll.

There is one other species, *P. carbonarius* (*Halictus carbonarius*, Smith). This is nearest to *P. noachinus*, but smaller, with more dark hair on the legs.

Parasphecodes fumidicaudus, sp. n.

♀.—Length $10\frac{1}{2}$ mm.

Pitch-black (including the legs), flagellum reddish at apex; pubescence black, more or less pallid on cheeks and sides of metathorax, and tubercles with a dense pale fringe; clypeus prominent, with sparse strong punctures and (toward base) much smaller ones, and a median depression; fringe below clypeus wholly dark; mesothorax moderately shining, distinctly and rather closely punctured, more sparsely on the disc posteriorly; scutellum bigibbous, with minute punctures, and scattered larger ones; area of metathorax rather strongly obliquely ridged, with a thickened margin interrupted in middle, much as in *arciferus*. Legs with dark hair; tegulae black. Wings dilute fuliginous, nervures and the rather small stigma very dark reddish; second s.m. very broad; first r. n. meeting second t.-c.; second r. n. and third t.-c. thin. First two abdominal segments distinctly but not very densely punctured; apex with black hair

Hab. Stradbroke Island, Queensland, Oct. 2, 1911 (*H. Hatcher*, Queensl. Mus. 21).

Parasphecodes noachinus, sp. n.

♀.—Length 11 mm., expanse about $20\frac{1}{2}$.

Black (including the legs), flagellum with the apical half very obscurely reddish beneath; hair of head and thorax pale grey, with much black on face, front, vertex, mesothorax, and scutellum; clypeus longitudinally grooved, with very strong punctures, and some small ones; front and vertex shining; mesothorax shining, but not brilliantly, strongly but not very densely punctured, quite sparsely at sides of middle; scutellum bigibbous, shining, and sparsely punctured; area of metathorax delicately obliquely striate, the

hind margin swollen and obtuse, interrupted in middle. Legs with dull white hair, dark fuscous on outer side of middle and hind tibiæ; hind spur simple; tegulæ black. Wings dilute brownish, stigma and nervures very dark reddish brown; second s.m. broad, about square; first r. n. joining second t.-c.; outer nervures thin but dark. Abdomen shining, finely punctured, the hind margins of the segments broadly smooth and impunctate; the first segment has a smooth impunctate area on each side; hair at apex black, of venter white to end of fourth segment; the second abdominal segment is very finely white-ciliate at extreme base.

Hab. Ararat, Victoria (*W. F. Hill*; *N. Mus. Vict.* 78, 80). Two specimens.

Parasphecodes dissimulator, sp. n.

♀.—Length about 11 mm.

Black, including legs; flagellum rather bright ferruginous at apex; clypeus shining, sparsely and irregularly punctured, with a median sulcus; front roughened, hardly shining; hair of head and thorax dull white, mixed with fuscous on front of head, and to some extent on disc of thorax; mesothorax densely punctured, shining between the punctures; scutellum flattened, closely punctured, not bigibbous; area of metathorax of the same type as in *P. noachinus*, but the striae very feeble. Legs with rather more dark hair than in *P. noachinus*, the hind tibiæ with a band of red-brown hair on outer side, hind basitarsus with a brush of red hair at end; tegulæ rufo-piceous. Wings strongly dusky, nervures and stigma ferruginous; second s.m. broad, receiving first r. n. at its apical corner. Abdomen nearly as in the allied species, the punctures on second segment small and not at all dense; hair at apex black, of venter pale; second ventral segment with a slight elevation.

Hab. One specimen labelled Carrom, Victoria (*French*; Froggatt coll. 176).

Parasphecodes atrorufescens, sp. n.

♀.—Length 10 mm.

Robust, black, with the first three abdominal segments very dark red; flagellum black, very faintly reddish at end; clypeus shining, with a slender median groove and sparse only moderately large punctures; front dullish, granular, but shining below middle ocellus; hair of head and thorax as in *P. dissimulator*; mesothorax densely, rather coarsely

punctured; scutellum slightly bigibbous, with small well-separated punctures on a shining surface; base of metathorax of the same type as that of *P. noachinus*. Legs with much dark hair, covering outer side of middle and hind tibiæ and tarsi; brush at apex of hind basitarsi dark; tegulæ black. Wings dusky, very strongly so apically; stigma and nervures piceous; second s.m. very broad, receiving first r. n. well before its end. Abdomen shining, the first two segments finely punctured, the first more closely than the second; hair at apex black; of venter, to end of fourth segment, glistening silvery; second ventral segment with a very large tubercle, the posterior slope of which is beset with silvery hairs.

Hab. Purnong (*S. W. Fulton*; Nat. Mus. Victoria, 138).

Andrena bateia, Cockerell.

Andrena batesiæ, Cockerell, Trans. Am. Ent. Soc. xxxvi. p. 248. Cyprus.

Following, I believe, an erroneous label, I wrote *batesiæ*, and the collector's name Miss Bates, although I ought to have known better, being well aware of the brilliant work of Miss Dorothea Bate in Cyprus.

Cælixys ducalis, Smith.

Professor C. F. Baker sends me this fine species, collected by himself at Los Baños, Philippine Islands. At the same locality he has also taken both sexes of *C. philippensis*, Bingham.

Xylocopa morio callichlora, Cockerell, variety *a*.

Apical half of anterior wings suffused with coppery red. Three females; Guayaquil, Ecuador, May to June, 1913 (*C. T. Brues*). *X. callichlora* probably deserves to rank as a distinct species.

XIV.—*Descriptions of new Genera and Species of Noctuidæ.*

By Sir GEORGE F. HAMPSON, Bart., F.Z.S.

[Continued from vol. xii. p. 601.]

CUCULLIANÆ.

2122 *b. Cucullia nubipicta*, sp. n.

♂. Head and thorax blue-grey mixed with fuscous brown; tegulæ with two dark lines at middle and one near tips; palpi with blackish streaks at sides except towards tip; pectus whitish tinged with red-brown; abdomen grey tinged